

SOV/2c-123-5-29/50

The Conservability of a Latent Image and of Sensitivity in Nuclear Photoemulsions Sensitized by Triethanolamine

during the irradiation (and especially not due to the absorption of the halogen separated out by the radiolysis of AgHal). Beginning with the formation of subcenters, the presence of triethanolamine in the emulsion is not of essential importance and the subsequent variation of the properties of the emulsion is determined by the presence of subcenters in the crystals. The decrease of triethanolamine in alkalinity (by adding acids which do not react with AgHal) diminishes its sensitizing effect. The experiments discussed in the present paper prove the sensitizing and also the stabilizing effect of triethanolamine in complete agreement with the mechanism of its interaction with the crystals of the photoemulsion. There are 3 tables and 7 references, 5 of which are Soviet.

ASSOCIATION: Radiyevyy institut im. V. G. Khlopina Akademii nauk SSSR
(Radium Institute imeni V. G. Khlopin of the Academy of Sciences, USSR)

Card 3/4

KARTUZHANSKIY, A.L.

"Autoradiography in biology and medicine" by George A. Boyd.
Reviewed by A.L. Kartuzhanskii. Zhur.nauch. i prikl.fot. i
kin. 4 no.2:158-159 Mr-Apr '59. (MIRA 12:4)
(Autoradiography) (Boyd, George A.)

21(1), 23(3,5)

SOV/77-4-4-13/19

AUTHORS: Kartuzhanskiy, A.L., and Soltitskiy, B.P.

TITLE: Letter to the Editor; The Effect of Not Substitutability at Photographic Activity of β -Radiation

PERIODICAL: Zhurnal nauchnoy i prikladnoy fotografii i kinematografii, 1959, Vol 4, Nr 4, pp 301-303 (USSR)

ABSTRACT: The authors state, that the effect, described by Ray and Stevens [Ref 17], demands a dependency in particular between its value, the limit of its existence on the one hand and the ionizing power of β -particles, the sensitivity of the emulsion on the other hand. The tests were made on electronographic plates, which are sensitive towards β -particles, low sensitive diapositive plates, and on nuclear emulsion type R NIKFI, with the highest sensitivity of all emulsions towards particles. As radiation source isotopes with pure β -radiation were used: P^{32} and C^{14} in Na_2HPO_4 and Na_2CO_3 . The results confirmed the existence of the

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Letter to the Editor; The Effect of Not Substitutability at
Photographic Activity of β -Radiation

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effect and the reason for non-substitutability, not depending on the choice of radiation. There are 2 graphs and 4 references, 3 of which are Soviet and 1 English.

ASSOCIATION: Leningradskiy sel'skokhozyaystvennyy institut (Leningrad Agriculture Institute)

SUBMITTED: April 5, 1959

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KARTUZHANSKIY, A.L.; SHUR, L.I.

Effect of nonreciprocity at long lighting durations for nuclear photographic emulsions sensitized with triethanolamine. Zhur. nauch.i prikl.fot.i kin. 5 no.1:58-60 Ja-F '60. (MIRA 13:5)

1. Leningradskiy institut sovetskoy trgovli imeni F. Engel'sa.
(Photographic emulsions)
(Photography, Particle track)
(Ethanol)

KARTUZHANSKIY, A.L.

"Ionography" [in French] by Pierre Demers. Reviewed by A.L.
Kartuzhanskii. Zhur.nauch.i prikl.fot.i kin. 5 no.1:79-81
Ja '60. (MIRA 13:5)
(Photography, Particle track)
(Photographic emulsions)

S/077/60/005/003/007/009
EO32/E414

AUTHOR: Kartuzhanskiy, A.L.

TITLE: Quantitative Characteristics of the Latent Image¹⁰
Formed Under the Action of Ionizing Particles¹⁹

PERIODICAL: Zhurnam nauchnoy i prikladnoy fotografii i
kinematografii, 1960, Vol.5, No.3, pp.221-223

TEXT: In an earlier paper by the present author and Soltitskiy (Ref.1) it was found that the reciprocity law breaks down in the case of β -particle induced images. Since it was suspected that this effect is due to regression, an investigation was made of the dependence of this effect on temperature. Three emulsions were exposed using C^{14} and P^{32} β -sources. They were: nuclear emulsion of type NIKFI-P (NIKFI-R), electron diffraction emulsion, and a diapositive emulsion. The temperature range investigated was 0 to 40°C. The humidity was kept constant and approximately equal to normal room humidity. It was found that Meikler's equation (Ref.2)

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$$H = \frac{H_0}{2} (1 + \sqrt{1 + bt})$$

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E032/E414

Quantitative Characteristics of the Latent Image Formed Under the
Action of Ionizing Particles

applies in this case and the value of the coefficient b which
appears in this expression is the same as in the case of light.
The numerical values of N_0 and U which enter into the formula
for b , namely

$$b = \frac{4V}{N_0^2} e^{-\frac{U}{KT}}$$

are given in the following Table:

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Quantitative Characteristics of the Latent Image Formed Under the
Action of Ionizing Particles

Emulsion	C14		P32		Light	
	N _o	U	N _o	U	N _o	U
Diapositive	34 ± 4	0.92±0.01	30 ± 4	0.88±0.01	31 ± 5	0.69±0.02
Electron diffraction	13 ± 2	0.98±0.01	14 ± 2	0.95±0.01	14 ± 3	0.75±0.02
Nuclear type R	7.2±0.8	1.02±0.01	8.0±0.8	0.99±0.01	7.5±1.5	0.80±0.02

There are 1 figure, 1 table and 3 Soviet references.

ASSOCIATION: Leningrad Institut sovetskoy trgovli im.F.Engel'sa
(Leningrad Soviet Trade Institute imeni F.Engels)

SUBMITTED: September 19, 1959
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KARTUZHANSKIY, A.L.

Physical and photographic fundamentals of autoradiography as a
quantitative method. Zhur.nauch.i prikl.fot.i kin. 5 no.4:
309-316 J1-Ag '60. (MIRA 13:8)
(Autoradiography)

AUTHORS: Kartuzhanskiy, A. L., Shur, L. I. S/020/60/131/01/017/060
B013/B007

TITLE: The Energy of the Activation of the Thermal Fading of a Latent Photographic Image ¹⁰Y

PERIODICAL: Doklady Akademii nauk SSSR, 1960, Vol 131, Nr 1, pp 64 - 67 (USSR)

ABSTRACT: The results given in the present paper also contain several data, which were determined by the method developed by P. V. Meyklyar. This method is based on the analysis of curves, which express the impossibility of substituting (of the so-called iso-opaque places) photographic layers within the range of long exposure times. The method in principle permits determination of the number of Ag atoms in the subcenter and the activation energy of an arbitrary group of atoms which is not larger than a subcenter. The authors first modify and supplement Meyklyar's method to a certain extent. The corresponding formulas are derived step by step and are explicitly written down. The experimental investigation was carried out on a fine-grained silver bromide emulsion, which had not been ripened a second time. The plates with the emulsion to be investigated were exposed for from 1 to 10^4 sec (sometimes also 10^5 sec) through a

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The Energy of the Activation of the Thermal Fading
of a Latent Photographic Image

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stepped wedge at temperatures of $+40^{\circ}$, $+20^{\circ}$, and, in some cases also at 0° , after which they were developed in an Amidol developer according to the two-temperature dry process. The extreme inclination $1/2$ (the Schwartzschild exponent p also equals $1/2$ and the number n of atoms in the subcenter equals 2) was found only near the blackening threshold (blackening density $D < 0.1$). To the extreme inclination $2/3$ ($p = 1/3$, $n = 3$) there corresponds $D \sim 0.6 - 0.8$, and with a sufficiently large D ($\sim 1.5 - 1.8$) the extreme inclination attains $3/4$ ($p = 1/4$, $n = 4$). Figure 1 shows the iso-opaque places for the three aforementioned values of D . From table 1 the increase of the activation energy U_1 with a decrease of the center consisting of 1 atoms may distinctly be seen. This increase is apparently slower than linear. The activation energy is approximately equal in all cases in which the Ag-particle lacks a total of one atom for stability. The stability of the center is thus due to the activation energy attaining a certain value, independent of the number of Ag-atoms required for this purpose. The efficacy of the sensitivity center must here be understood to be the depth of the corresponding "energy trap". The more

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The Energy of the Activation of the Thermal Fading
of a Latent Photographic Image

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difficult the formation of the latent image, the more Ag-atoms are required for the purpose of obtaining an image of critical extent (which suffices for the subsequent catalysis of the image). There are 1 figure, 1 table, and 7 references, 6 of which are Soviet.

PRESENTED: September 12, 1959, by A. F. Ioffe, Academician

SUBMITTED: September 8, 1959



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KARTUZHANSKIY, A.L.

Kinetics of development of the separate track of an ionized particle in the photographic emulsion. Part 2. Kinetics of development of regressed tracks and regression development centers. Zhur. nauch. i prikl. fot. i kin. 6 no.1:14-18 Ja-F '61. (MIRA 14:3)

1. Institut Sovetskoy trgovli imeni F. Engel'sa, Leningrad.
(Photography, Particle track)

KARTUZHANSKIY, A.L.; SOLTITSKIY, B.P.

Sensitizing photographic materials by triethanolamine to improve
the technique of autoradiography. Biofizika 6 no. 1:126-127 '61.
(MIRA 14:2)

1. Leningradskiy sel'skokhozyaystvennyy institut.
(ETHANOL) (AUTORADIOGRAPHY) (PHOTOGRAPHIC CHEMISTRY)

KARTUZHANSKIY, A.L.

Reciprocity failure phenomenon and the photographic action of gamma rays. Zhur.nauch.i prikl. fot. i kin. 6 no.2:141-142 Mr-Apr '61.
(MIRA 14:4)

1. Institut Sovetskoy trgovli im. F.Engel'sa, Leningrad.

(Photographic emulsions)

(Gamma rays—Industrial applications)

KARTUZHANSKIY, A.L.

"Grundriss der Photographie und ihrer Anwendung in der Atomphysik"
by G.Joos, E. Schopper. Reviewed by A.L. Kartuzhanskii. Zhur.
nauch. i prikl. fot. i kin. 6 no. 3:239-240 My '61. (MIRA 14:5)
(Photography) (Joos, G.) (Schopper, E.)

KARTUHLINSKIY, A.L.; SHUP, L.I.

Sensitization of photographic emulsions with triethanolamino.
Zhur.nauch.i prikl.fot. 1 kin. 6 no.4:306-316 J1-Ag '61.

(MIRA 14:11)

(Photographic emulsions)
(Triethanolamino)

S/081/62/000/011/010/057
E111/E152

AUTHOR: Kartuzhanskiy, A.L.

TITLE: Experimental determination of the activation energy of the thermal resorption of latent-image centres of various dimensions

PERIODICAL: Referativnyy zhurnal, Khimiya, no.11, 1962, 68, abstract 11 B 424. (Zh. nauchn. i prikl. fotogr. i kinematogr., v.6, no.6, 1961, 449-450).

TEXT: A method is proposed for the experimental determination of the energy of activation for the thermal resorption (U_i) of centres of the latent image (LI), consisting of different numbers i of Ag atoms. The method is essentially: if from experiments on mutual irreplaceability under the action of particles A, B, C with various ionizing abilities the values U_{iA} , U_{iB} , U_{iC} were obtained, then the dimensions of the corresponding centres LI i_A , i_B , i_C can be obtained from analysis of the isoopacity for threshold developing times

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Experimental determination of ...

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t_A , t_B , t_C (the developing times at which individual traces of particles become just distinguishable), in their turn determined from curves of the kinetic development of traces of particles A, B, C. The isoopacities are constructed for a density close to the darkening threshold, for example about 0.1 above the fog. By this method the relation $U = f(i)$ was obtained for certain nuclear emulsions.

[Abstractor's note: Complete translation.]

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KARTUZHANSKIY, A.L.

Elementary photographic processes in an electric field. Usp.fiz.nauk
73 no.3:471-502 Mr '61. (MIRA 14:6)
(Electron optics) (Electric fields)

BOGOMOLOV, K.S., red.; PERFILOV, N.A., red.; BELOVITSKIY, G.Ye., red.;
DOBROSERDOVA, Ye.P., red.; ZHDANOV, G.B., red.; KARTUZHANSKIY,
A.L., red.; LYUBOMILOV, S.I., red.; MINERVINA, Z.V., red.;
RAZORENOVA, I.F., red.; ROMANOVSKAYA, K.M., red.; SAMOYLOVICH,
D.M., red.; STARININ, K.V., red.; TRET'YAKOVA, M.I., red.;
UVAROVA, V.M., red.; SHUR, L.I., red.; POPOVA, A.K., red.; VEPRIK,
Ya.M., red.; VERES, L.F., red. izd-va; KUZNETSOVA, Ye.B., red. izd-
va; POLYAKOVA, T.V., tekhn. red.

[Nuclear photography; transactions] IAdernaia fotografiia; trudy
tret'ego Mezhdunarodnogo soveshchaniia. Moskva, Izd-vo Akad. nauk
SSSR, 1962. 474 p. (MIRA 15:6)

1. Colloque International de Photographie Corpusculaire. 3d,
Moscow, 1960. 2. Nauchno-issledovatel'skiy kinofotoinstitut,
Moskva (for Bogomolov, Uvarova, Romanovskaya, Starinin). 3. Pred-
sedatel' Organizatsionnogo komiteta Tret'yego Mezhdunarodnogo sove-
shchaniya po yadernoy fotografii. 1960, Moskva (for Bogomolov).
4. Zamestitel' predsedatelya Organizatsionnogo komiteta Tre'yego
Mezhdunarodnogo soveshchaniya po yadernoy fotografii. 1960, Moskva
(for Perfilov). 5. Radiyevyy institut im. V.G.Khlopina Akademii
nauk, Leningrad (for Shur, Perfilov). 6. Institut sovetskoy trgovli
im. F.Engel'sa (for Kartuzhanskiy). 7. Ob'yedinennyy institut yader-
nykh issledovaniy, Dubna (for Lyubomilov). 8. Institut atomnoy
energii im. I.V.Kurchatova Akademii nauk SSSR, Moskva (for
Samoylovich).

(Photography, Particle track)

KARTUZHANSKIY, A. L. , PYASETSKAYA, O. V., AND VENDROVSKIY, K. V.

"On the photometric equivalence of the blackening caused by the influence of light and corpuscular rays"

Fourth International Colloquium on Photography (Corpuscular) - Munich, West Germany, 3-8 Sep 62

KARTUZHANSKIY, A.L.

Energy of activation of the heat resorption of latent image centers
as a function of the number of atoms in them. Zhur.nauch.i prikl.
fot.i kin. 7 no.1:57-58 Ja-F '62. (MIRA 15:3)

1. Leningradskiy institut sovetskoy trgovli imeni Engel'sa.
(Photochemistry) (Photographic emulsions---Testing)

KARTUZHANSKIY, A.L.; SOLTITSKIY, B.P.

Specimen for determining the resolving power of photographic layers
exposed to nuclear radiation. Zjur.nauch.i pril.k.fot. i kin. 7 no.
3:223-224 My-Je '62. (MIRA 15:6)

1. Leningradskiy institut sovetskoy trgovli imeni F.Engel'sa.
(Photographic emulsions--Testing) (Radiography)

S/811/62/000/000/002/003

AUTHOR: Kartuzhanskiy, A. L.

TITLE: The phenomenon of the noninterchangeability in the photographic effect of nuclear radiations.

SOURCE: Yadernaya fotografiya; Trudy Tret'yego Mezhdunarodnogo soveshchaniya po yadernoy fotografii, Moskva, iyul' 1960g. K. S. Bogomolov and N. A. Perfilov, eds. Moscow. Izd-vo AN SSSR, 1962, 66-72.

TEXT: This report on laboratory tests endeavors to reconcile divergences in previous experimental findings on the noninterchangeability (NIC) of time and exposure intensity in achieving a specified degree of photographic blackening with nuclear radiation. Previously I. A. Fomina, née Kovner (ZhETF, v. 20, 1950, 401), had found NIC for medium-energy (30-80 keV) electron beams for times of the order of 1 sec, but none for shorter or longer times, and had also ascertained changes in the NIC effect attributable to changes in development (Zh. nauchn. i prikl. fotogr. i kinematogr., v. 1, 1956, 331) and temperature (ibid., v. 4, 1959, 94). Digby, Firth & Hercock (J. Phot. Sci., v. 1, 1953, 194) and Ray & Stevens (Brit. J. Radiol., v. 26, 1953, 362) had not encountered the effects reported by Fomina (Kovner), but had detected a distinct NIC for much longer exposure times (minutes to days). The present investigation of the NIC for various nuclear radiations was undertaken in connection with several problems of quantitative autoradiography; hence, the

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exposure times run from minutes to weeks and, on exceptional occasions, to months. The tests confirmed the Ray-Stevens conclusions and revealed a profound analogy of the NIC relative to particle action and the NIC for low-intensity light. A flux of β -particles emanating from C^{14} and P^{32} isotopes in activity-graded solutions of Na_2CO_3 and Na_2HPO_4 was used; a decay correction for time was applied to the P^{32} radiation sources. Diapositive, electronographic, and nuclear $HUKOM$ (NIKFI) P- (R-) type plates (the latter with a 15-20 μ thick emulsion). All development was performed in LD-19, diluted 1:2, at $T=20^\circ C$, time - 8 min (mechanical stirring with a soft rubber brush). The relative exposure intensity H was plotted against time, and iso-opaques were drawn. $\log H = 1.0$ was designated to signify the absence of the NIC effect. The regressional nature of the effect is shown by the fact that the degree of the drop in sensitivity with increase in time is greater for lower emulsion sensitivities and ionizing effectiveness of the particles; also, at higher temperatures the drop in sensitivity becomes more pronounced and the time thresholds of the effect are shortened. The effects of other parameters (20-min extended development, soaking in 1% $NaNO_2$ solution prior to exposure, low-pressure exposure at 1 mm Hg) are tabulated. Similar effects were observed under α -particle radiation from a Po^{210} source. Tests were also made with γ -rays emitted by the Co^{60} of a gelatinous wedge, linearly tapered, of $CoCl_2$ (cf. Kuzin, A.M., Mamul', Ya.V., Sbornik "Primeneniye mechenykh atomov v analiticheskoy khimii" {The application of tagged atoms in analytical chemistry}, "Izvestiya AN SSSR, Card 2/4

The phenomenon of the noninterchangeability. . .

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1955) to cover an entire linear range of exposure intensity simultaneously. The iso-opaque curves obtained lend themselves to an analytical expression developed by P. V. Meyklar (ZhETF, v. 23, 1952, 217) for low-intensity flare spots. It is concluded that for a given emulsion the minimal number of Ag atoms in the sensitization center, N_0 , is the same for light and for particles of any kind; the activation energy of thermal desorption, U , grows monotonically with the ionizing capacity of the particles, i.e., the thermal destruction of the centers becomes increasingly difficult as the ionizing capacity of the particles generating them increases; lastly, U is always greater for particles than for light. The difference of the U values for various particles is interpreted as a difference in the dispersity of the latent image formed by them, and the magnitude of U itself is regarded as a fully single-valued characteristic of the relative magnitude of the centers in the crystals of a given emulsion. This is the substance of the present study of the NIC with respect to particles. Thanks are expressed to B. P. Solitskiy for his assistance with the preparation of the C^{14} and P^{32} sources. There are 5 figures, 2 tables, and 12 references (10 Soviet and the cited 2 English-language papers). Presentation of the paper was followed by a discussion in which L. M. Biberman (senior author associated with I. A. Fomina (Kovner)) took issue with the author's use of Meyklar's low-intensity-light formula as unjustified, asserts that almost any kind of theoretical curve can be fitted to the author's gently sloping experimental data by suitable

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coefficients, and terms the author's conclusions unconvincing and overextended. The author rejects these comments and recommends that the interlocutor defer any criticism pending a perusal of the full paper.

ASSOCIATION: Institut sovetskoy torgovli im. F. Engel's (Institute of Soviet Commerce imeni F. Engels), Leningrad, USSR.

Card 4/4

VENDROVSKIY, K.V.; KARTUZHANSKIY, A.L.; PYASETSKAYA, O.V.

Dependence of the photometric equivalent upon the nature of the radiation acting on the photographic layer and upon the conditions of exposure. Zhur.nauch.i prikl.fot.i kin. 8 no.1:67-69 Ja-F '63.
(MIRA 16:2)

1. Vsesoyuznyy nauchno-issledovatel'skiy kinofotoinstitut (NIKFI) i Leningradskiy institut sovetskoy trgovli imeni F.Engel'sa.

(Photographic sensitometry)

KARTUZHANSKIY, A.L.

Study of elementary particles by the photographic method" by
C.F.Powell, P.Fauler, D.Perkins. Reviewed by A.L.Kartuzhanskii.
Zhur.nauch.i prikl.fot.i kin. 8 no.1:78-79 Ja-F '63.

(MIRA 16:2)

(Photography, Particle track)

(Powell, C.F.) (Fauler, P.) (Perkins, D.)

KARTUZHANSKIY, A.L.; SHUR, L.I.

Latest data on the mechanism of the action of triethanolamine
on photographic emulsions. Zhur. nauch. i prikl. fot. i kin.
8 no.3:228-229 My-Je '63. (MIRA 16:6)

(Ethanol)
(Photographic emulsions)
(Photography, Particle track)

KARTUZHANSKIY, A.L.; SHUR, L.I.

Studying the mechanism of the sensitizing of nuclear emulsions
by some dyes. Zhur. nauch. i prikl. fot. i kin. 8 no.4:261-267
Jl-Ag '63. (MIRA 16:7)

1. Leningradskiy institut sovetskoy trgovli imeni F. Engel'sa.
(Photography, Particle track)
(Photographic emulsions)

VEPRIK, Ya.M.; KARTUZHANSKIY, A.L.; TABOLA, V.P.

Relationship between the surface and internal latent images
determined by the physical development. Zhur. nauch. i prikl.
fot. i kin. 8 no.4:309-310 JI-Ag '63. (MIRA 16:7)

1. Leningradskiy institut kinoinzhenerov (LIKI).
(Photochemistry)
(Photography—Developing and developers)

KARTUZHANSKIY, A.L.; SOLTITSKIY, B.P.

Principles of sensitometry plotting for photographic
layers exposed by β -radiation. Zhur. nauch. i prikl. fot.
i kin. 9 no.3:212-214 My-Je '64. (MIRA 18:11)

KARTUZHANSKIY, A.L.

Literature on electrophotography published in Russian from
1958 to 1962. Zhur. nauch. i prikl. fot. i kin. 9 no.3:238-
239 My-Je '64.

Index of books on color photography published from 1958 to
1962. Ibid.:239 (MIRA 18:11)

KARTUZHANSKIY, A.L.

Comparing the dispersibility of the latent image formed by the effect of light and by the effect of ionizing particles. Zhur.nauch. i prikl. fot. i kin. 9 no.4:276-282 J1-Ag '64. (MIRA 17:10)

1. Leningradskiy institut sovetskoy trgovli imeni Engel'sa.

L 63819-65

ACCESSION NR: AP5011723

UR/0077/64/009/004/0300/0302

AUTHOR: Zhdanov, A. P.; Kartuzhanskiy, A. L.; Martysh, G. G.; Shur, L. I. 18
B

TITLE: Effect of polyethylene glycol on nuclear photographic emulsions. 15

SOURCE: Zhurnal nauchnoy i prikladnoy fotografii i kinematografii, v. 9, no. 4, 1964, 300-302

TOPIC TAGS: photographic chemistry, photographic chemical, nuclear emulsion, photosensitivity, glycol

ABSTRACT: Adding polyethylene glycol (PEG) to various photographic emulsions can substantially increase their light-sensitivity. The effect of PEG on various nuclear emulsions differing in characteristics, was tested both for exposure to light and to particles. It was added to emulsion in amounts from 0.8 to 3.2 grams per liter of emulsion. The experiments were performed on two relativistic emulsion s-- the R-NIKFI type and the extra fine grain PR-2, and two less sensitive emulsions, -- the Ya-2 and A-2 type. After glazing, the emulsion layers were exposed to low intensity light (exposure time = 45 seconds) through a graduated wedge, and also irradiated with Po^{210} alpha-particles, Ci^{14} beta-radiation in a special sensitometer, and by a beam of relativistic electrons. The results showed that the sensitivity to

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particles was not appreciably increased in any case. In contrast, the increment in light sensitivity in all cases was quite distinct. Another feature of the light-sensitivity results was that the increment in sensitivity bore no relationship to the original sensitivity and the extent of chemical sensitization of emulsions, but dropped off clearly with decreasing size of microcrystals. Therefore, the effect of FEG is related not to the reactions in which sensitivity centers participate, but with reactions in which the entire bulk or surface of the AgHal crystal participates.

ASSOCIATION: none

SUBMITTED: 18Mar64

INCL: 00

SUB CODE: ES, GO

NO REF SOV: 006

OTHER: 000

JPRS

Card 2/2

KARTUZHANSKIY, A.L.

Comparing the parameters of latent images in optical and nuclear emulsions. Zhur.nauch. i prikl.fot. i kin. 9 no.6:414-419 N-D '64. (MIRA 18:1)

1. Leningradskiy institut sovetskoy trgovli imeni F.Engel'sa.

KARTUZHANSKIY, A.L.; SOLTITSKIY, B.P.

Resolving power of photographic layers exposed to nuclear radiation. Usp.
nauch.fot. 10:253-261 '64. (MIRA 17:10)

KARTUZHANSKIY, Aleksandr L'voyich; IOFIS, Ye.A., kand. tekhn.
nauk, red.; BOGATOVA, V.S., red.

[Physical foundation of the photographic processes on
silver halide salts] Fizicheskie osnovy fotografiche-
skogo protsessa na galogenidoserebrianykh soliakh. Mo-
skva, Iskusstvo, 1965. 84 p. (MIRA 18:5)

L 26934-65 FSS-2/ENT(1)/EWA(d)/T/EED(b)-3/EWA(c) Pae-2 IJP(c)

ACCESSION NR: AP5004211

S/0077/65/010/001/0076/0073

AUTHOR: Kartuzhanskiy, A. L.

TITLE: 16th all-union conference on scientific photography devoted to nuclear photography 10

SOURCE: Zhurnal nauchnoy i prikladnoy fotografii i kinematografii, v. 10, no. 1, 1965, 76-79

TOPIC TAGS: scientific photography, photographic emulsion, nuclear photography

ABSTRACT: The conference was the first to be specially devoted to nuclear photography, and was held from 30 September through 3 October 1964 in Leningrad. Approximately 150 persons participated, representing 19 institutions and organizations from Moscow, Leningrad, Dubna, Yerevan, Kazan, and other cities. Twenty-five papers were read and discussed at six sessions held in five sections. The first

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ACCESSION NR: AP5004211

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section "Photographic action of charged particles" included three papers: "Dependence of ionizing ability on the momentum for ultra-relativistic electrons and positrons" by G. B. Zhdanov, M. I. Tret'yakova, and M. N. Shcherbakova; "Investigation of the influence of intensity of an electron beam and the temperature on the sensitivity of photographic emulsions" by K. S. Bogomolov, I. A. Fomina, and V. S. Markova and "Direct method of determining the micro-sensitivity of AgBr microcrystals to charged particles" by I. M. Kuks. The second section was devoted to "Preparation of photographic materials for nuclear research" and included four papers: "Properties of type PR-2 fine-grain emulsion" by N. A. Perfilov, N. R. Novikova, V. I. Zakharov, and Ye. V. Fadina, "Use of synthetic polymers in the preparation of fine-grain nuclear emulsions" by N. R. Novikova, V. I. Zakharov and Ye. V. Fadina, "On sensitivity centers and development centers of unsensitized nuclear emulsions" by D. M. Samoylovich, and "Theoretical justification of the choice of developing substance for inclusion in the nuclear emulsion" by Ya. M. Veprik, A. P. Zhdanov.

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ACCESSION NR: AP5004211

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G. G. Martysh, and L. I. Shur. ¹⁰The third section "Investigation of the properties of nuclear emulsions and their preliminary processing" included seven papers: "Kinetics of reduction of silver ions on gold-silver centers" by Ya. M. Veprik, "Sensitivity centers of emulsions successively sensitized with gold and triethylene amine" and "comparative hypersensitization of nuclear emulsions by triethylene amine and other alkali sensitizers," by D. M. Samoylovich, I. V. Ardashev and Ye. S. Barinova, "Regression of sensitivity and of the latent image in photographic emulsions for nuclear and light radiations" by A. L. Kartuzhanskiy, A. F. Yurchenko, L. I. Shur, and G. G. Martysh, "Mechanism for the influence of moisture on the stability of sensitivity centers and of the latent image" by K. M. Romanovskaya and K. S. Bogomolov, "Registration of alpha stars from radioactive nuclei and time discrimination of alpha-particle tracks in nuclear emulsions" by I. B. Berkovich, A. P. Zhdanov, and L. I. Shur, and "Enrichment of nuclear emulsions by hydrogen nuclei" by L. N. Bokova and L. G. Kriventsova. The fourth section dealt with "Photographic processing of nuclear emulsions" and included six papers: "Penetration of compo-

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ACCESSION NR: AP5004211

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nents of processing solutions into photographic emulsions" by I. B. Blyumberg, "Accelerated method of processing nuclear emulsions 600 μ thick" by A. B. Akopova, "Investigation of threshold oxidation in the development of the latent image produced by charged particles in different nuclear emulsions" by N. P. Kocherov, and "Development of thick emulsions in an electrolyzer," by D. M. Samoylovich, A. A. Kondrashina, and V. G. Tarasenkov, and "Automatization of isothermal development of nuclear emulsions" by V. D. Ryabov and A. M. Gushchin, and "Investigation of 4-aminopyrazolones-5 as developers for nuclear photography," by K. S. Bogomolov, T. I. Krestovnikova, M. S. Khaykin and I. I. Levkoyev. The fifth section was devoted to "Measurement and analysis of particles" and included four papers: "Development of first commercial models of microscopes for nuclear emulsions with automatic readout of digital information, and the practice of their use in conjunction with electronic computers" was the joint effort of the Fiziko-tekhnicheskiy institut im. A. F. Ioffe (Physicotechnical Institute) (A. S. Assovskaya, F. G. Lepekhin, M. M. Makarov) and

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ACCESSION NR: AP5004211

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the LOOMP joint group (R. M. Raguzin, G. Ye. Skvortsov, N. M. Fedorova), "Semiautomatic installation for the measurement of geometrical parameters of tracks in nuclear photographic plates and practice of its use for the measurement of neutron spectra" by G. Ye. Belovitskiy, A. Ye. Voronkov, and L. V. Sukhov, "Experience with an instrument for automatic measurement of ionization and momentum on relativistic-particle tracks" by A. Ye. Voronkov, G. B. Zhdanov, M. F. Solov'yeva, L. V. Sukhov, M. I. Tret'yakova and M. M. Chernyavskiy, and "measurement of the relative ionization from the blob count and the gap spectrum on tracks of fast particles in nuclear emulsions," by A. S. Assovskaya and F. G. Lepekhin. The last section included also a paper "calculation of the resolution of photographic emulsions under autoradiography conditions" by Kh. A. Getsel'. K. S. Bogomolov reviewed the papers delivered at the Fifth International Colloquium on Nuclear Photography held in Geneva in September 1964.

ASSOCIATION: None

Card

5/6

KARTUZHANSKIY, A.L.; YURCHENKO, A.F.

New type of aging of photographic emulsions. Zhur.nauch.i prikl.fot.
i kin. 10 no.3:217-218 My-Je '65.

(MIRA 18:11)

1. Leningradskiy institut sovetskoy trgovli imeni F.Engel'sa.

ACC NR: AT7000924

SOURCE CODE: UR/3180/66/012/000/0091/0095

AUTHOR: Kartuzhanskiy, A. L.

ORG: none

TITLE: Possibility of discriminating between types of radiation recorded in the form of photographic density

SOURCE: AN SSSR. Komissiya po khimii fotograficheskikh protsessov. Uspekhi nauchnoy fotografii, v. 12, 1966. Yadernaya fotografiya (Nuclear photography), 91-95

TOPIC TAGS: nuclear emulsion, particle track, track analysis, radiation detecting device

ABSTRACT: The author analyzes various methods of identifying a detected particle by ascertaining the nature of the track it leaves in the emulsion. These are aimed at separating the useful density from that of the background, determining means of intensifying the useful density without similar intensification of the background, weakening the background density without a similar weakening of the useful density, or a combination of these procedures. Differences between this type of discrimination and other known methods used in nuclear photography, of modifying the widths and optical densities or the number of grains per unit length in the tracks of different particles are described. The methods discussed are discrimination prior to exposure, during the

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ACC NR: AT7000924

time of the exposure, between exposure and development, during the development, and after development. The only possibility of creating conditions favoring discrimination prior to exposure is to make use of the unequal role of deep and shallow traps for electrons under the influence of different radiation. Discrimination during the time of exposure would possibly consist of varying the temperature conditions in the emulsion. There are more opportunities for discrimination in the interval between exposure and development, such as the Herschel effect, thermal or chemical (accelerated) regression, oxidation of the latent image, and others. There is little that can be done during development, although some variant of physical development may contribute to discrimination during development. Discrimination after the completion of the chemical-photographic processing is possible only if some electron-microscopic differences can be revealed between the tracks produced by different types of radiation. It is pointed out in conclusion that each of the methods has strong limitations.

11,07/
SUB CODE: ~~207~~ SUBM DATE: 00/ ORIG REF: 009/ OTH REF: 009

Card 2/2

KARTUZHANSKIY, L.B.

KARTUZHANSKIY, L.B.

"The physical basis of photography" [in Czech] by Ladislav Zachoval
[prof. fiz.-mat.fakul'teta Karlova universiteta, Prag]. Reviewed
by L.B.Kartuzhanskii. Zhur.nauch. i prikl. fot. i kin. 2 no.6:477
N-D '57. (Photography) (Zachoval, Ladislav) (MIRA 10:12)

KARTUZHANSKIY, L. I.

Building-Contracts and Specifications

"Building Law and building contracts." I. L. Braude. Reviewed by L. I. Kartuzhanskiy.
Vest. Len. un. 6, No 11, 1951

Monthly List of Russian Accessions, Library of Congress, September 1952. UNCLASSIFIED

KARTUZHANSKIY, L. I.

Contracts

Present-day status of economic contracts and arbitration, Uch. zap. Len. un.
No. 129, 1951.

9. Monthly List of Russian Accessions, Library of Congress, May 1952, Uncl.

KARTUZOV A.P.

KARTUZOV, A.P., brigadir puti (stantsiya Lyntupy Kalininskoy dorogi).

Scythe-rake. Put' i put.khoz. no.9:30 S '57. (MIRA 10:10)
(Railroads--Equipment and supplies)

KARTUZOV, A.P., dorozhnyy master (st.Lyntupy Belorusskoy dorogi)

We take good care of our measuring instruments. Put' i put.khoz. no.11:12
N '58. (MIRA 11:12)
(Railroads--Equipment and supplies) (Measuring instruments)

107-57-3-46/64

AUTHOR: Manuilov, V. , Kozyrev, A. , and Kartuzov, I.

TITLE: The "Melodiya" Tape Recorder (Magnitofon "Melodiya")

PERIODICAL: Radio, 1957, Nr 3, pp 42-45 (USSR)

ABSTRACT: Soviet industry has built and is releasing for sale a new portable tape recorder, "Melodiya." Its performance meets the requirements of the fourth group of GOST 8088-56. Type 2 or SN tape should be used with the new double-track tape recorder. At 9.53 cm/sec tape speed, the apparatus can record and reproduce a frequency band of 100 to 6,000 cps with 3 db irregularity at 400 cps. The overall recording-and-reproduction distortion factor is 2.8% at an output of 1.5 w. The signal-noise ratio is 38 db. Sensitivity of the recorder at 1,000 cps: at microphone terminals, 0.5 mv; at "phono" terminals, 100 mV; at "radio" terminals, 3 volts; and at wire-broadcast-line terminals, 10 volts. Outputs for an external amplifier and an external speaker are provided. Output voltage for an external amplifier is 775 mv on 30 kohms, and output voltage for the external speaker is 2.15 volts on 3 ohms. Tone control has a range of 20 db at 6,000 cps. The erasing and magnetizing HF oscillator functions at 50 kc. A visual recording-level indicator has a time constant of 250 m/sec. Up

Card 1/3

107-57-3-46/64

The "Melodiya" Tape Recorder

to 250 m of tape can be accommodated on a reel, which amounts to ninety minutes of recording time on both tracks. The time of fast forward or fast rewind motion is under 100 seconds. A pointer-type selection locator is provided for rough determination of tape length. Three knobs and a keyboard switch serve to control the recorder. Cabinet dimensions are 200 x 300 x 370 mm. The recorder consumption is 65 w for recording or reproducing, and 100 w for fast rewinding, AC, 110, 127, 200, or 220 volts. The performance remains good within line-voltage fluctuations of +5% -- 10%. A continuous operation for three hours is permissible. A dynamic MD-55 microphone, two connecting cables, three reels, and spare erasing and universal heads are supplied with the recorder. A pictorial diagram given in the article shows the mechanical construction of the recorder. A simplified circuit diagram of the amplifier and of the recorder proper is also presented. Recording and reproduction frequency response curves are shown in the band of 60 cps to 10,000 cps. The following tubes are used: two 6N2P, two 6P1P, and one 3-3-488. A selenium type ABC-80-260 rectifier feeds the anodes. Magnetic head, coil, and transformer

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107-57-3-46/64

The "Melodiya" Tape Recorder

data is tabulated.

There are four figures and one table in the article.

Card 3/3

KARTUZOV, I. P.

36188 Glubokaya vytyazhka detaley iz orgstekla (pleksiglasa). Priborostroeniye, vyp. 4
1948, S. 50-53.

SO: Letopis' Zhrunal'nykh Statey, No. 49, 1949

PANOV, N. [translator]; KARTUZOV, P. [translator]; BOCHAROVA, Z. [translator];
KURYLEV, Ye.S., dotsent [translator]; RIUTOV, D.G., kand.tekhn.
nauk, red.; CHICHKOV, N.V., red.; SUDAK, D.M., tekhn.red.

[Ninth International Congress on Refrigeration; collection of
reports] IX Mezhdunarodnyi kongress kholoda. Sbornik dokladov.
Pod red. D.G.Riutova. Moskva, Gos.izd-vo tog.lit-ry, 1958.
197 p. (MIRA 12:7)

1. Mezhdunarodnyy kongress kholoda, 9th, Paris, 1955. 2. Laboratoriya tekhnicheskoy informatsii Vsesoyuznogo nauchno-issledovatel'skogo instituta kholodil'noy promyshlennosti (im.A.I. Mikoyana) (for Panov, Kartuzov, Bocharova). 3. Leningradskiy tekhnologicheskiy institut kholodil'noy promyshlennosti (for Kurylev).

(Refrigeration and refrigerating machinery--Congresses)

S/081/61/000/014/012/030
B103/B217

AUTHOR: Kartuzov, P. V.

TITLE: Some applications of computers in technological processes

PERIODICAL: Referativnyy zhurnal. Khimiya, no. 14, 1961, 326, abstract
14/143. (Vestn. tekhn. i ekon. inform. N.-i. in-t tekhn.-ekon.
issled. Gos. kom-ta Sov. Min. SSSR po khimii, 1959, no. 6 (18),
43 - 48)

TEXT: Review of foreign publications on the application of analog and
digital computers for automatic control in the chemical industry.
[Abstracter's note: Complete translation.] ✓

Card 1/1

GONCHAROV, L.V., otv. red.; MARTYNOV, V.A., red. SVANIDZE, I.A.,
red.; KARTUZOV, S.P., red.; KOZLOVSKAYA, G.M., red.

[Economics of Africa] Ekonomika Afriki; sbornik statei.
Moskva, Nauka, 1965. 174 p. (MIRA 18:9)

1. Akademiya nauk SSSR. Institut Afriki.

22416-65 EED-2/EWT(d)/EMP(1) Pg-4/Pq-4/Pq-4 LJP(c) GS/BB/MLK
ACCESSION NR: AT4047760 Pk-4 S/0000/64/000/000/0243/0253

AUTHOR: Kartuzov, Ya. V.

TITLE: Low-frequency logical elements based on ferrite-diode transformer circuits

SOURCE: AN SSSR. Institut avtomatiki i telemekhaniki. Teoriya i primeneniye avtomaticheskikh sistem (Theory and application of automatic systems). Moscow, Izd-vo Nauka, 1964, 243-253

TOPIC TAGS: logical element, ferrite diode element, low frequency logical element

ABSTRACT: A multifunctional multi-input logical element is described which is intended for realizing a sum of products or a product of sums with a partial or total inversion (or some other complicated function). The new multifunctional element includes a unit generator, a repeater, and several control elements

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ACCESSION NR: AT4047760

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according to the number of inputs: methods of voltage compensation and shunting a winding in recording 1 are used. Various logical operations including "AND-negation," "OR-negation," "negative OR," implication, modulus-2 addition, etc., are possible. These logical devices based on the new multifunctional element are considered: a dynamic trigger (as a storage unit), a counter-input dynamic trigger, a delay unit, a single-digit code converter, and a binary counter. The multifunctional element "was developed jointly with R. V. Bilik and V. A. Zhzhikashvili." Orig. art. has: 15 figures and 15 formulas.

ASSOCIATION: none

SUBMITTED: 06Jun64

ENCL: 00

SUB CODE: DP, EC

NO REF SOV: 004

OTHER: 000

Card 2/2

L 28057-66 EWA(h)/EWT(d)/EWT(1)/EWP(1) IJP(c) TG/GG/BB/JXT(CZ)/GS

ACC NR: AT6002985

SOURCE CODE: UR/0000/65/000/000/0165/0173

AUTHOR: Kartuzov, Ye. V.; Raykin, A. L.

ORG: none

TITLE: Reliability of ferrite-diode logical elements

SOURCE: Vsesoyuznoye soveshchaniye po magnitnym elementam avtomatiki i vychislitel'noy tekhniki. 9th, Yerevan, 1963. Magnitnyye tsifrovyye elementy (Magnetic digital elements); doklady soveshchaniya. Moscow, Izd-vo Nauka, 1965, 165-173

TOPIC TAGS: logical element, ferrite diode element

ABSTRACT: A mathematical model of reliability of logical elements that have more than 2 inputs is offered. The model permits evaluating the consequences of failures of individual elements due to short-circuits or breaks with an allowance for the role of the element in the equipment. Also, the reasonable minimum number of inputs of the logical element which still guarantees its specified reliability can be determined. The above approach to reliability evaluation is demonstrated by an example of an

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ACC NR: AT6002985

AND-element with k inputs. Differential equations for the probability of various states of the logical element are set up on the basis of a "diagram of states" which shows the consequences of failures of individual components. Solved by a conventional method (e.g., Laplace's transforms), the differential equations yield a formula for the probability that the element in question would be able to operate with a known reduced number of inputs (less than k). A numerical example with a 3-input AND-element illustrates the method. Procedural steps in the reliability calculations are outlined. Orig. art. has: 4 figures, 19 formulas, and 3 tables.

SUB CODE: 13, 09 / SUBM DATE: 23Apr65 / ORIG REF: 003

Card 2/2 *cc*

DOC NR: AT6002984

SOURCE CODE: UR/0000/65/000/000/0156/0164

AUTHOR: Blilk, R. V.; Zhzhikashvili, V. A.; Kartuzov, Ye. V.

ORG: none

TITLE: Ferrite-diode logical elements for remote control and telemetry

SOURCE: Vsesoyuznoye soveshchaniye po magnitnym elementam avtomatiki i vychislitel'noy tekhniki, 9th, Yerevan, 1963. Magnitnyye tsifrovyye elementy (Magnetic digital elements); doklady soveshchaniya. Moscow, Izd-vo Nauka, 1965, 156-164

TOPIC TAGS: logical element, remote control, telemetry

ABSTRACT: Several ferrite-core-plus-diode logical elements and switching circuits are described; the experimental elements used VT-2 and K-65, 10x6x2.5-mm ferrite cores. A 4-core AND-gate is briefly described, and the plots of power, current, and current ratio vs. supply voltage for 2-10 inputs are presented. A 3-core NOT gate (inverter) is briefly described. A circuit diagram is shown that carries out the Scheffer operation: $f = x \wedge y = x \vee y$. Also, a circuit diagram for a

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L 37488-66

ACC NR: AT6002984

NOR operation is shown. Of combination logical elements, the inhibition, implication, nonequivalence $[f = (\bar{x} \wedge y) \vee (x \wedge \bar{y})]$, and multifunctional elements are briefly covered. Also, principal circuits and relations for the dynamic trigger, count trigger, and single-digit code converter are given. Orig. art. has: 15 figures and 15 formulas.

SUB CODE: 13, 09 / SUBM DATE: 23Apr65 / ORIG REF: 002

Card 2/2726

29688

S/181/61/003/010/010/036
B102/B108

9,4170 (1051, 1035, 1482)

AUTHORS: Galavanov, V. V., Kartuzova, I. A., and Nasledov, D. N.

TITLE: Measurement of the diffusion length of minority carriers in InSb

PERIODICAL: Fizika tverdogo tela, v. 3, no. 10, 1961, 2973 - 2980

TEXT: Since the characteristics of InSb infrared receivers depend considerably on the minority-carrier lifetime τ (or their diffusion length L), measurement of these quantities is of great interest. The authors used the Waldes method to determine L and τ in n- and p-type InSb single crystals having impurity concentrations between 10^{12} and 10^{16} cm^{-3} . L was determined by the Waldes light-probe method. For weak illumination intensities, when the collector photo-emf $V < kT/5e$ (e - electron charge), V is proportional to the light-induced minority carrier concentration. When the surface recombination rate is small, $V = V_0 \exp(-x/L)$ in the dark (x - distance from the illuminated region). This relation holds for one-dimensional geometry. In axisymmetric geometry $V = V_0 \exp(-x/L)/\sqrt{x}$. It was to be found experimentally which of these formulas has to be applied.

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Measurement of the diffusion...

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B102/B108

The 0.2 - 2 mm thick test pieces were polished and then etched with CP-4A (SR-4A). They were placed in a vacuum cryostat with an NaCl window. The light incident on the specimen was interrupted by an 800-cps chopper. A tungsten or phosphor-bronze point served as a collector contact; a 28-MM (28-IM) amplifier was used to measure the variable photo-emf on it. The measurements were made between 100 and 200°K. The carrier concentration in the specimens at 77°K was determined from the Hall effect, L was determined from the inclination of the straight line $\log V = f(x)$. τ was determined from $\tau = L^2/D$ where

$$D = D_p \frac{b(1 + \frac{p_0}{n_0})}{b + \frac{p_0}{n_0}}, \quad (4)$$

$D_p = u_p kT/e$ being the hole diffusion coefficient, $b = u_n/u_p$, the mobility ratio, p_0 and n_0 the equilibrium concentrations. For intrinsic conductivity $D = 2bD_p/(b+1)$. In the case of impurity conductivity, $D = D_p$ for n-type, and $D = D_n = u_n kT/e$ for p-type specimens. The carrier concentration in the intrinsic-conductivity region of InSb is given by

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Measurement of the diffusion...

29688 S/181/61/003/010/010/036
B102/B108

$n_i \approx 6 \cdot 10^{14} T^{3/2} \exp(-1510/T)$. The temperature dependence of τ can be seen in Fig. 4. When temperature drops from 170 to 120°K, τ decreases to less than one hundredth its value. In this range the temperature dependence of τ obeys the Shockley-Reed law. It is shown that the experimental curves $\tau = f(1/T)$ agree with the formula

$$\tau = \frac{2\tau_i n_i}{n_0 + p_0} = \frac{2\tau_i n_i}{\sqrt{4n_i^2 + N_{n,p}^2}}, \quad (12)$$

which holds for a neutral crystal and radiative recombination. $N_{n,p}$ are the majority-carrier concentrations in an n- or p-type crystal in the region of impurity conductivity. $\tau = 2\tau_i n_i / N_{n,p}$ holds for the impurity-conductivity region ($n_i \ll N_{n,p}$). The straight line corresponding to Auger recombination is too steep. Results: (1) No correlation was found between L and the impurity concentration. (2) The data agree with the radiative-recombination theory for $b \approx 600 - 700$. (3) The difficulties arising in the interpretation of the results may be due to an inaccurate measurement of L and an inaccurate calculation of τ_i . There are 5 figures, 1 table, and 24 references: 9 Soviet and 15 non-Soviet. The three most recent refer-

Card 3/4

Measurement of the diffusion... 29688 S/181/61/003/010/010/036
B102/B108

ences to English-language publications read as follows: R. A. Laff,
H. Y. Fan. Phys. Rev. 121, 53, 1961; R. T. Landsberg, A. R. Beattie.
J. Phys. Chem. Sol., 8, 73, 1959; R. N. Zitter, A. J. Strauss, A.E. Attard.
Phys. Rev., 115, 266, 1959.

ASSOCIATION: Fiziko-tehnicheskii institut im. A. F. Ioffe AN SSSR
Leningrad (Physicotechnical Institute imeni A. F. Ioffe
AS USSR, Leningrad)

SUBMITTED: April 28, 1961

Legend to the Table: (1) Number of
the specimen, (2) voltage.

№ образца (1)	p_0 cm ⁻²	n_0 cm ⁻²	U_{H_2} cm ² /s · sec.	U_{H_2} cm ² /s · sec.	№ (2)
13p14	$1.4 \cdot 10^{13}$	—	$9 \cdot 10^4$	$9 \cdot 10^3$	100
13p1	$1 \cdot 10^{13}$	—	$1.5 \cdot 10^5$	$3 \cdot 10^3$	50
15p5	$5 \cdot 10^{15}$	—	$2 \cdot 10^5$	$4 \cdot 10^3$	50
16p1	$1 \cdot 10^{16}$	—	$6 \cdot 10^4$	$2 \cdot 10^3$	30
12n2	—	$2 \cdot 10^{12}$	$7 \cdot 10^4$	10^3	700
13n2	—	$2 \cdot 10^{13}$	$2 \cdot 10^5$	$3 \cdot 10^3$	650
13n3	—	$3 \cdot 10^{13}$	$4.5 \cdot 10^4$	10^3	45
14n6	—	$6 \cdot 10^{14}$	$1.2 \cdot 10^5$	$2 \cdot 10^3$	60

Card 4/54

1. KARTUZOVA, M. A.
2. USSR (600)
4. Seeds - Testing
7. Strength of initial growth as a method for the biological evaluation of seed quality. Sel. 1 sem. 20, No. 2, 1953.

9. Monthly List of Russian Accessions, Library of Congress, May 1953, Unclassified.

KARTUZOVA, M.A., kandidat sel'skokhozyaystvennykh nauk.

Determining the quality of seed grain, its preparation for storage,
and the rules for storage. Grain-cleaning machines. Est. v shkele
no.4:60-64 J1-Ag '56. (MIRA 9:9)

1.Moskovskaya sel'skokhozyaystvennaya akademiya imeni K.A.Timiryazeva.
(Grain)

KARTVELISHVILI, D.

With the KAZ trade mark. Za rul. 16 no.11:18-19 N '58.

(MIRA 12:1)

1. Glavnyy konstruktor Kutaissskogo avtomobil'nogo zavoda
imeni G.K. Ordzhonikidze.

(Motortrucks)

GAL'PERIN, M. D.; PIL', B. N.; KARVASARSKIY, B. D.

Radiation therapy of opticochiasmatic arachnitis. Med. rad. no.4:
18-24 '62. (MIRA 15:6)

1. Iz rentgenologicheskogo otdeleniya (zav. - prof. M. D.
Gal'perin) Nauchno-issledovatel'skogo psikhonerologicheskogo
instituta imeni V. M. Bekhtereva.

(MENINGITIS) (RADIOTHERAPY)

BATIASHVILI, S.M., inzh.; GAVRIL'CHENKO, V.F., inzh.; KARTVELISHVILI,
D.L., inzh., red.; GERMAN, N.Ye., inzh., red. izd-va; UVAROVA,
A.F., tekhn. red.

[Catalog of parts for the KAZ-600V dump trucks, KAZ-601V cement truck and KAZ-120T saddle-type tractor] Katalog detalei avtomobil'ia-samosvala KAZ-600V, avtomobil'ia-tsementovoza KAZ-601V i sedel'nogo tiagacha KAZ-120T. Moskva, Gos. nauchno-tekhn. izd-vo mashinostroit. lit-ry, 1960. 323 p. (MIRA 13:11)

1. Kutaisskiy avtomobil'nyy zavod im. G.K. Ordzhonikidze. Kutaisi.
(Dump trucks) (Cement--Transportation)
(Motortrucks)

[illegible]

KARTVELISHVILI, G.M., inzhener.

New socialist city of Rustavi. Stroi.prom. 35 no.4:5:10 Ap '57.
(MLRA 10:3)

1. Glavnyy inzhener Zakavkazmetallurgstroya.
(Rustavi--City planning)
(Rustavi--Apartment houses)

KARTVELISHVILI, K.M.

Recalculating gravity anomalies into anomalies of the vertical
gravity gradient. Izv. AN SSSR Ser. geofiz. no.8:1171-1177
Ag '64 (MIRA 17:8)

1. Institut geofiziki AN GruzSSR.

BALAVADZE, B.K.; GABUNIYA, V.P.; SHENOELAYA, G.Sh.; ABASHIDZE, V.G.;
KARTVELISHVILI, K.M.; MINDELI, P.Sh.

Studying the gravity field of the Greater Caucasus. Trudy Inst.
geofiz. AN Gruz. SSR 19:199-216 '60. (MIRA 14:9)
(Caucasus--Gravity prospecting)

KARTVELISHVILI, K.M.

Computing the anomaly of vertical gravity gradient in a mountain
region from the Δg chart. Trudy Inst. geofiz. AN Gruz. SSR 19:
217-227 '60. (MIRA 14:9)
(Caucasus--Gravity)

KARTVELISHVILI, K. M.

Dissertation defended for the degree of Candidate of Physicomathematical Sciences at the Institute of Earth Physics imeni O. Yu. Shmidt in 1962:

"Several Problems of Reduction of the Force of Gravity in Mountainous Regions."

Vest. Akad. Nauk SSSR. No. 4, Moscow, 1963, pages 119-145

KARTVELISHVILI, K.M.

Gravitational effect of bodies of regular geometric shape.
Trudy Inst. geofiz. AN Gruz. SSR 21:213-219 '63.

Accuracy in computing anomalies and reductions in gravity
in a mountainous region. Ibid.:221-236

(MIRA 18:12)

L 27295-65 EWT(1)/EWG(v) Po-4/Fq-4/Pe-5/Pg-4 OW
ACCESSION NR: AP5003272

S/0251/64/036/003/0561/0564

AUTHORS: Balavadze, B. K.; Kartvelishvili, K. Z.

TITLE: Observations on tidal variations of the force of gravity in Tbilisi

SOURCE: AN GruzSSR. Soobshcheniya, v. 36, no. 3, 1964, 561-564

TOPIC TAGS: geophysics, geophysical research, tide, gravitational force/ Askaniya
Gs 11 No. 144 gravimeter

ABSTRACT: A gravimetric station was established in Tbilisi in 1960 for the purpose of observing land tide variations of the force of gravity. Three series of observations were organized: the first from February 8, 1960, to March 10, 1960; the second from May 23, 1960, to August 17, 1960; and the third from January 31, 1961, to April 1, 1961. The test measurements were conducted in an underground chamber in carefully controlled temperatures and humidity; an Askaniya gravimeter, Gs-11 No. 144, was used in the measurements. A cautious procedure of instrument control and calibration was observed for each test series. The observations were carried out by both the first and second methods of V. P. Fertsev (Garmonicheskiy analiz prilivov. Izv. AN SSSR, ser. geofiz., No. 8, 1958, and Garmonicheskiy analiz 50-dnevnykh ryadov nablyudeniy prilivnykh izmeneniy sily tyazhlosti. "Izucheniye zemnykh

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ACCESSION NR: AP5003272

prilivov," sbornik statey, No. 2. Izd. AN SSSR, M., 1961). Test observations were tabulated and the resulting phase lags were compared with results of similar observations obtained in various other parts of the USSR. Orig. art. has: 2 tables.

ASSOCIATION: Akademiya nauk Gruzinskoy SSR, Institut geofiziki (Institute of Geophysics, AN GruzSSR)

SUBMITTED: 03Jul64

EXCL: 00

SUB CODE: ES

NO REF SOV: 008

OTHER: 000

Card 2/2

L 52220-65 EWT(1)/EWG(7) Po-4/Pe-5/Pq-4/P-4 GH

ACCESSION NR: AP5017165

UR/0387/65/000/002/0075/0079
525.6

34
33

AUTHORS: Balavadze, B. K.; Karmaleyava, R. M.; Kartvelishvili, K. Z.; Latynina, L. K.

TITLE: Observations on tidal deformations of the earth by means of a horizontal extensometer in Tbilisi

SOURCE: AN SSSR. Izvestiya. Fizika zemli, no. 2, 1965, 75-79

TOPIC TAGS: tide, earth figure, deformation meter, quartz

ABSTRACT: Two large quartz extensometers were set up in the underground observatory of the Institut geofiziki Gruzinskoy AN (Geophysical Institute of the Georgian Academy of Sciences) in Tbilisi in 1962. The tunnel (100 m long) in which the instruments were placed is in tuffaceous sandstone and mudstone, and is lined with a layer of concrete 30-40 cm thick. One extensometer, with a 41-m base, is set up 40 m from the tunnel entrance. Its sensitivity is $0.22 \cdot 10^{-8}$ mm, and it is oriented N 60° E. The other instrument, with a 14.5-m base, is set up 70 m from the entrance. Its sensitivity is $0.7 \cdot 10^{-8}$ mm, and it is oriented N 30 W. The instruments record the displacement of two fixed points on the earth's surface, the distance between

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L 62220-65

ACCESSION NR: AP5017165

the points being the instrumental base. Connection with the ground is made through rigid rods (tubes of transparent quartz glass, 3 m. long, 40 mm in diameter, and with walls 2-3 mm thick). A continuous record was obtained from only the N 30° W instrument because of moisture damage to the other. For June-September 1963 this instrument showed a tidal displacement amounting to $3.5 \cdot 10^{-8}$ mm. The durations of the fluctuations were subjected to harmonic analysis to isolate the tidal component. The ratio of elastic constants (Love number to Shida number) was found to be 6.6. Assuming the first to be 0.5-0.6, the second would then be 0.08-0.09, a value that is in good agreement with other authors. The value of the Love number, computed separately, is found to be lower than that given by gravimetric data and inclinometer measurements. It is possible that the variation may be due to local peculiarities in deformation. Orig. art. has: 2 figures, 2 tables, and 8 formulas.

ASSOCIATION: Akademiya nauk SSSR, Institut fiziki Zemli (Academy of Sciences SSSR, Institute of Physics of the Earth)

SUBMITTED: 04May64

ENCL: 00

SUB CODE: ES, ME

NO REF SOV: 003

OTHER: 002

Card 2/2

BALAVADZE, B.K.; KARMALEYEVA, R.M.; KARTVELISHVILI, K.Z.; LATYNINA, L.K.

Use of a horizontal extensometer in observing tidal deformations
of the earth at Tbilisi. Izv. AN SSSR. Fiz. zem. no.2:75-79 '65.
(MIRA 18:6)

1. Institut fiziki Zemli AN SSSR.

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KARTVELISHVILI, M. G. 11 H

Local anesthetic properties of diethylaminobutyl p-aminobenzoate. M. G. Kartvelishvili (Acad. of Military Med. and Leningrad Veterinary Inst.). *Farmakol. i Toksikol.* 8, No. 3, 32-0 (1945).—In terminal anesthesia p-Et.NC₆H₄.OCCCH₂NH₂ (I) at 0.05-0.5% concn. has 2-3 times the activity of cocaine (II); at 1%, I and II are about equally active. In rabbit and human eyes I does not dilate either conjunctival or scleral vessels. In rabbit cornea the time of peak anesthetic effect (min. after dosage) and duration (in min.) of anesthesia for different concns. of I are: 0.05%, 8-12 and 20-25; 0.1%, 8-20 and 40-50; 0.3%, 8-20 and 60; 1%, 8-20 and 75. At 0.1% or higher concns., in frogs and decapitated cats, I anesthetizes by its effect on nerve cond. The effect appears in 7 min. at 0.1% or 5 min. at 1% (procaine, III, 65.5 and 13 min.). At 50-400 p.p.m. I is a vasodilator (isolated rabbit ears) and is antagonistic to adrenaline. Given subcutaneously to white mice I has 1.5 times the toxicity of II and 7 times that of III, intravenously, only 1/4 that of II. A lethal dose paralyzes the vascular and respiratory centers. The hydrochloride of I is readily sol. in water, keeps well in storage and withstands boiling (15-20 min.) or repeated sterilization. Julian F. Smith

L 58475-65

ACCESSION NR: AP5017197

UR/OL79/64/000/005/OL31/OL36

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6

AUTHOR: Aronovich, G. V. (Gor'kiy, Moscow); Kartvelishvili, N. A. (Gor'kiy, Moscow)

TITLE: Application of the theory of stability to problems in static and dynamic stability of power systems

SOURCE: AN SSSR. Izvestiya. Mekhanika i mashinostroyeniye, no. 5, 1964, 131-136

TOPIC TAGS: electric power production, solid mechanics

Abstract: The problem of reliability of a power system is presently considered on the one hand as a problem in determining necessary power and energy reserves and on the other — as a problem in stability of the stationary conditions of the system, the results of solutions of these two problems being used almost independently of each other. Stability problems are formulated as determination of the stability or instability of the system with given parameters in relationship to a given disturbance, without determining the probability characteristics of the loss of stability. For electric power consumers, there is no fundamental difference between loss of stability and other emergencies, and these disruptions in stability should be taken into account in estimating the total probability of continuity in electric supply in the same way as breakdowns in station

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ACCESSION NR: AP5017197

equipment, breaks in transmission lines and other accidents. The problem of reliability is, in the final analysis, a problem of the economy of a power system since a disruption in the electric power supply to the consumer leads to economic losses or inconveniences to the population but, with rare exceptions, does not bring catastrophe or other completely inadmissible results. The authors show how the concepts in the general theory of stability may be applied to problems in reliability of power systems. Orig. art. has 15 formulas.

ASSOCIATION: none

SUBMITTED: 29Feb64

ENCL: 00

SUB CODE: EE, MC

NO REF SOV: 016

OTHER: 006

JPRS

Card

2/2

KARTVELISHVILI, N.A.; STAROSEL'SKIY, V.A.; TATARSKAYA, P.M.

Attempt to use the theory of stability and the theory of reliability.
Izv. AN SSSR Mekh. i mashinostr. no.6:172-174 N-D '64.

(MIRA 18:2)

KARTVELISHVILI, N.

"Some questions in the unsettled work routine of hydroelectric power stations."

Dissertation for degree of Candidate of Technical Sciences, Baku Power-Engineering
Institute, AS AzSSR

Subject: Hydropower engineering

Gidrotekhnicheskoye, stroitel'stvo, 12, 1946.

KARTVELISHVILI, N.A.

Hydraulic impact in reaction turbine plants. Izv. AN Arm. SSR, Ser.
FIZMATH nauk 1 no.2:125-139 '48. (MLRA 9:8)

Gidroelektricheskaya laboratoriya Akademii nauk Armyanskoy SSR.
(Hydraulic turbines)

KARTVELISHVILI, N.A.

Analysis of water-level fluctuations in hydroelectric power installations during load pickup. Izv.AN Arm.SSR.Ser.FMET 1 no.7:
(MLRA 9:8)
573-587 '48.

1. Gidroelektricheskaya laboratoriya vodno-energeticheskogo instituta
Akademii nauk Armyanskoy SSR.
(Power engineering)

KARTVELISHVILI, N.A.

Law of regulating hydraulic turbines. Izv. AN Arm. SSR. Ser. FMET 1
no. 7:589-602 '48. (MLRA 9:8)

1. Gidroelektricheskaya laboratoriya vodno-energeticheskogo
instituta Akademii nauk Armyanskoy SSR.
(Hydraulic turbines)

KARTVELISHVILI, N.A.

Kartvelishvili, N. A. On conditions for the oscillation of an automatic regulator. Doklady Akad. Nauk SSSR (N.S.) 61, 21-23 (1943). (Russian)

The physical problem leads to a linear differential equation with constant coefficients which is solved operationally. To ascertain the character of the solution, oscillatory or not, it is necessary to examine the algebraic nature of the characteristic roots. R. Bellman (Stanford University, Calif.).

Source: Mathematical Reviews,

Vol 10, No.1

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KARTVELISHVILI, N. A.

USSR/Electronics
Regulators, Electronic
Mathematics, Applied

Jul 48

"Specifications of the Quality of Automatic Regulation," N. A. Kartvelishvili, 3 pp

"Dok Ak Nauk SSSR" Vol LXI, No 1

The transitional process in a regulating system is described by the equation of the object regulated

$$M(p)S + N(p)\bar{\Phi} = Q(p)\Gamma$$

and the equation of the regulator

$$A(p)\bar{\Phi} = B(p)S,$$

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USSR/Electronics (Contd)

Jul 48

in which p is Heavisand's operator. $S, \Gamma, \bar{\Phi}$ are operator representations and the regulating reaction, excitation reaction and deviations of the regulated quantity from the normal value. M, N, Q are functions of p , the parameters of which depend only on the object regulated. A, B are functions of p , the parameters of which depend only on the regulator. Author deduces criterion for quality of regulation and constructs a vector diagram showing his results. Submitted 15 Mar 1948.

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